

What is claimed is:

1. A disk cartridge in which a discoid recording medium is rotatably contained in a housing and which is inserted into a slot formed in a disk drive to be placed in the disk drive,

5 wherein the housing includes an opening for a read/write head of the disk drive to access a surface of the recording medium, a rotary shutter for opening/closing the opening while being urged by a spring member to a closing direction, and shutter locking means for locking the rotary shutter at a closed position,

10 the rotary shutter is constituted so that a lock on the rotary shutter is released by lock releasing means and shutter opening means provided in the disk drive when inserting the disk cartridge into the disk drive, and the rotary shutter is rotated to an open position so as to compress the spring member, and

15 the spring member constituted so that the spring member has an effective length shorter than a rotation stroke of the rotary shutter, and the rotary shutter is led to the closed position when ejecting the disk cartridge from the disk drive.

20 2. The disk cartridge according to claim 1,

 wherein the spring member is constituted of a thin long coil spring which stretches and shrinks along a guide wire extended along a periphery of the rotary shutter.

3. The disk cartridge according to claim 2,

25 wherein the shutter locking means comprises:

 a shutter locking member having a convex engaging portion

which can engage with a concave engaging portion formed on the periphery of the rotary shutter, and provided rotatable between a shutter locking position where the convex engaging portion engages with the concave engaging portion and a lock releasing
5 position where the convex engaging portion is escaped from the concave engaging portion in the housing; and

a second spring member which urges the shutter locking member toward the shutter locking position.

4. The disk cartridge according to claim 3, wherein the
10 lock releasing means provided in the disk drive includes a lock releasing member which engages with the shutter locking member when inserting the disk cartridge into the disk drive and rotates the shutter locking member from the shutter locking position to the lock releasing position by resisting urging
15 force of the second spring member.

5. The disk cartridge according to claim 4,
wherein an arcuate groove which is concentric with the rotary shutter is formed in the housing of the disk cartridge, and a shutter knob which protrudes from the arcuate groove and
20 can move along the arcuate groove is attached to the rotary shutter, and

the shutter opening means provided in the disk drive includes an engaging wall which engages with the shutter knob of the rotary shutter released by the lock releasing means when
25 inserting the disk cartridge into the disk drive and rotates the rotary shutter to the open position.

6. A disk drive including a slot to which a disk cartridge in which a discoid recording medium is rotatably contained in a housing is inserted, a driving mechanism which rotates the recording medium to be driven, and a read/write head which
5 accesses a surface of the rotating recording medium to record/reproduce information,

wherein the housing of the disk cartridge is provided with an opening for the read/write head to access the surface of the recording medium, a rotary shutter which opens/closes the
10 opening while being urged by a spring member to a closing direction, and shutter locking means for locking the rotary shutter at a closed position,

the disk drive further includes lock releasing means which releases a lock of the rotary shutter by the shutter
15 locking means when inserting a disk cartridge into a disk drive, and shutter opening means which rotates the rotary shutter to an open position by resisting urging force of the spring member, and

the disk drive still further includes shutter closing
20 means which leads the rotary shutter to the closed position by engaging with the rotary shutter when ejecting the disk cartridge from the disk drive.

7. The disk drive according to claim 6, wherein the shutter closing means is constituted of an elastic member.

25 8. The disk drive according to claim 6,
wherein the shutter locking means provided rotatable in

the disk cartridge comprises:

a shutter locking member having a convex engaging portion which can engage with a concave engaging portion formed on a periphery of the rotary shutter, and provided between a shutter locking position where the convex engaging portion engages with the concave engaging portion and a lock releasing position where the convex engaging portion is escaped from the concave engaging portion in the housing; and

a second spring member which urges the shutter locking member toward the shutter locking position.

9. The disk drive according to claim 8,

wherein the lock releasing means includes a lock releasing member which engages with the shutter locking member when inserting the disk cartridge into the disk drive and rotates the shutter locking member from the shutter locking position to the lock releasing position by resisting urging force of the second spring member.

10. The disk drive according to claim 9,

wherein an arcuate groove which is concentric with the rotary shutter is formed in the housing of the disk cartridge, and a shutter knob which protrudes from the arcuate groove and can move along the arcuate groove is attached to the rotary shutter, and

the shutter opening means includes an engaging wall which engages with the shutter knob of the rotary shutter released by the lock releasing means when inserting the disk cartridge

into the disk drive and rotates the rotary shutter to the open position.

11. The disk drive according to claim 10,

wherein the shutter closing means is constituted of an
5 elastic member which is engaged with the shutter knob and bent
by the shutter knob to allow the shutter knob to pass through
when inserting the disk cartridge into the disk drive and
engaged with the shutter knob to lead the rotary shutter to a
closed position to be locked by the shutter locking member when
10 ejecting the disk cartridge from the disk drive, and bent by
the shutter knob to allow the shutter knob to pass through.